

Modeling and Optimization for Efficient Design and Control

Paving Paths to Healthier Chemical & Bio Systems and Bridging Barriers between Academia & Industry

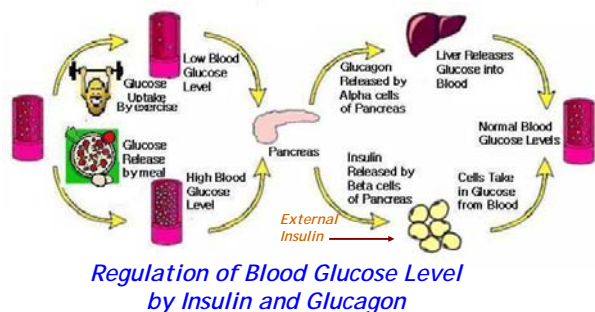
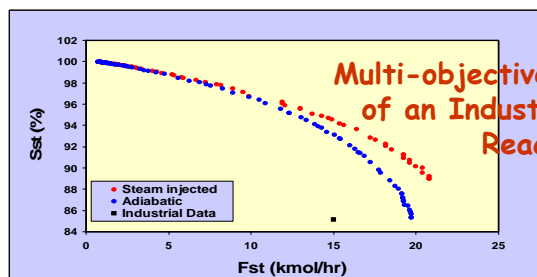
Maximize Products while

Minimizing Resources Required

Process optimization is essential for improving profitability and reducing negative environmental impact. Our research encompasses both process modeling and optimization for multiple objectives.

Ongoing Projects

- Modeling & Optimization of Industrial Reactors & Processes
- Optimization of Polymer Reactors for Multiple Objectives
- Enhanced Methods for Multi-Objective Optimization

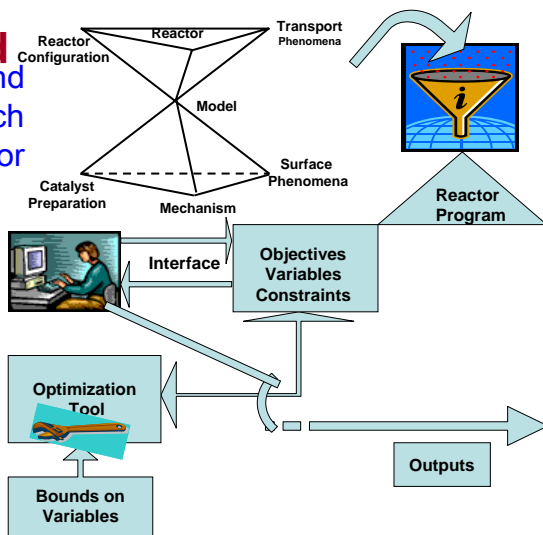
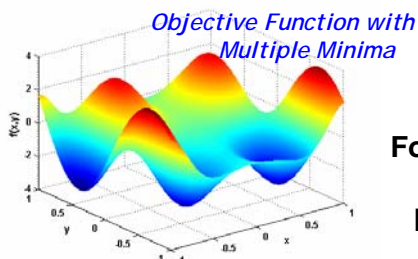


Achieve the Best via Global Optimization

Global optimum is essential for maintaining competitiveness and for accurate modeling. Our research focuses on effective methods for global optimization and their applications.

Ongoing Projects

- Global Optimization Methods
- Phase Equilibrium Calculations
- Distillation Simulation & Design
- Estimation of Model Parameters



Avoid Chaos by Effective Control

Body conditions such as temperature and blood pressure are controlled naturally. Process industries too require effective control for producing quality products safely. Main objectives of our research are to enhance the performance of industrial control systems and to provide robust control systems for biomedical applications when body's natural systems are defective.

Ongoing Projects

- Modeling & Control of Physiological Processes (such as Blood Glucose and Blood Pressure)
- Process Simulation & Plant-Wide Control
- Model-Based Control of Nonlinear Processes



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